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Self-Compassion and Suicidal Behavior in College Students: Serial Indirect Effects via Depression and Wellness Behaviors

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Abstract

Objective: College students may be at heightened risk for suicide and suicidal behavior due to maladaptive cognitive-emotional factors and failure to practice basic health behaviors. However, self-compassion and wellness behaviors may protect against risk. The relation between self-compassion and suicidal behavior and the contributing roles of depressive symptoms and wellness behaviors was examined.

Participants: Participants were 365 undergraduate students. Data was collected in April 2015.

Methods: A cross-sectional, survey design was employed. Participants completed measures assessing self-compassion, depressive symptoms, wellness behaviors, and suicidal behavior. Serial mediation analyses were conducted covarying age, sex, and ethnicity.

Results: Self-compassion was inversely related to suicidal behavior, and this relationship was serially mediated by depressive symptoms and wellness behaviors.

Conclusions: Self-compassion may protect against suicidal behavior, in part, due to reduced depressive symptoms and heightened engagement in wellness behaviors. Individual and campus-wide strategies promoting self-compassion and wellness behaviors may reduce suicide risk on college campuses.

Self-Compassion and Suicidal Behavior in College Students: Serial Indirect Effects via Depression and Wellness Behaviors

Suicide is a significant public health concern, and the 10th leading cause of death in the United States. [1] Young adults, including those attending college, may be at particular risk for suicidal behavior. Suicide is the second-leading cause of death for college students, [2-3] perhaps due to the high prevalence of psychopathology on college campuses and the failure to practice adaptive health behaviors (e.g., adequate sleep, balanced diet, moderate drinking). [2, 4-5]

Suicidal behavior, operationalized as ideation and attempts, is more prevalent than suicide, but is a strong predictor of eventual death by suicide. [6] Annually, 8% of college students seriously consider suicide and 1.3% make attempts, [2] compared to 3.7% of U.S. adults who experience suicidal ideation and 0.5% of adults who make attempts annually, [7] highlighting the vulnerability of college students to suicidal behavior.

The development of efficacious suicide prevention and intervention strategies is dependent on the identification of malleable risk and protective factors. Risk factors for suicide and suicidal behavior include, among others, psychopathology, such as depression and depressive symptoms, [5-6] and poor health and well-being (e.g., substance use, risky sexual behaviors, poor physical health). [2,4] Although many risk factors for suicide are well-established in the literature, factors that are protective are not as well-known. Our study examines the association between one such protective factor, self-compassion, and suicidal behavior, within the context of their relation with depressive symptoms and health behaviors.

Self-Compassion

Self-compassion is conceptualized as being kind to oneself in the face of inadequacy and failure, having mindful acceptance of one's suffering, and acknowledging a sense of common

humanity – the mutual experience of suffering [8]. Although self-compassion is believed to have stability over time and situations [8], some evidence suggests that situational factors may impact levels of self-compassion [9] and the effectiveness of exercises to bolster self-compassion further highlight its malleability. Self-compassion is beneficially related to physical and mental health outcomes, including fewer depressive symptoms and greater engagement in health behaviors. [10-11] Additionally, preliminary evidence suggests that self-compassion is associated with reduced risk of suicide. [12-14]

Self-compassion may directly lessen suicide risk, such that individuals who are more understanding toward themselves, recognize that they are not alone in their suffering, and are mindful of their experiences, have less likelihood of engaging in suicidal behavior. Yet, it is also possible that self-compassion indirectly influences suicide risk via its relation with other factors, including its beneficial effects on symptoms of psychopathology (i.e., depression) and promotion of engagement in wellness behaviors. [11, 15]

College Student Depression

According to the National College Health Assessment survey, 12.0% of college students self-report a diagnosis of depressive disorder, annually, and 32.6% of college report being so depressed that it is difficult to function. [2] Depression is a well-established risk factor for suicidal behavior, and up to half of individuals who die by suicide meet criteria for major depressive disorder. [16] College students with suicidal ideation have more depressive symptoms than their peers without ideation; [17] however, even students with low levels of depression experience heightened suicidal ideation. [18] Preliminary evidence, however, suggests that self-compassion may protect against the effects of depression in clinical, community, and college student samples. [19-21]

Wellness Behaviors

Self-compassion also appears to be beneficially related to health, [10] and engagement in wellness behaviors. [11, 19] The concept of wellness has been defined as an active process by which an individual becomes aware of and makes choices toward a more successful existence. [4] Wellness behaviors include adaptive health behaviors, such as adequate sleep, healthy diet, exercise, and self-care. [22] Engaging in adaptive and proactive wellness behaviors is associated with better physical, mental, emotional, and spiritual health. [4] Lower levels of self-compassion, however, are associated with less engagement in healthy behaviors. [19]

Lack of engagement in healthy behaviors and poor health are related to suicidal behavior and death by suicide. [23] For example, suicidal ideation in college students is associated with increased engagement in health risk behaviors, such as alcohol and illicit drug use; [23] whereas, engagement in wellness behaviors (e.g., eating and sleeping regularly, engaging in physical activity) is associated with less suicidal ideation. [24] Most research on wellness behaviors has focused on physical health; however, as previously stated, engaging in physical wellness behaviors also has positive effects on cognitive-emotional functioning, including increased self-esteem and self-efficacy, and less psychopathology. [15] Bi-directionality also exists, however, as maladaptive cognitive-emotional functioning and poor mental health have an adverse association with engagement in proactive, adaptive health behaviors. [25-26]

The Present Study

As reviewed, numerous independent relations between the variables of interest are documented in the extant literature, but the interrelations between these variables, and their combined contribution to suicidal behavior, are unknown. Therefore, the relation between self-compassion and suicidal behavior was examined, both directly and as mediated by depressive

symptoms and wellness behaviors. At the bivariate level, we hypothesized that self-compassion and wellness behaviors would be positively associated, that both would be inversely related to depressive symptoms and suicidal behavior, and that depression and suicidal behavior would be positively related. At the multivariate level, we hypothesized that higher levels of self-compassion would be related to less depression (first order mediator) and, in turn, to greater wellness behaviors (second order mediator) and less suicidal behavior. Due to potential bi-directionality between depressive symptoms and wellness behaviors, a relative comparison was conducted, hypothesizing that higher levels of self-compassion would be related to suicidal behavior via wellness behaviors (first order mediator) and, in turn, less depression (second order mediator) and consequent suicidal behavior.

Methods

Participants and Procedure.

Participants (N = 356) were recruited from a rural, Southeastern university, in an Institutional Review Board approved study. Participants provided electronic informed consent before completing online self-report measure questionnaires, and were awarded extra credit or course research credit for completion.

Measures

Participants completed a demographic survey, in addition to measures assessing the variables of interest. Due to previous research indicating sex, age, and race/ethnicity differences with regard to suicidal behavior, [2-5] depressive symptoms, [2] self-compassion, [8] and engagement in wellness behaviors, [15] we covaried the factors of age, race/ethnicity, and sex in all multivariate analyses.

The *Suicidal Behavior Questionnaire-Revised* (SBQ-R) [27] is a 4-item measure used to assess suicidal behavior including lifetime history of ideation and attempts, suicidal ideation over the past year, communication of suicidal behavior, and likelihood of future attempts. Items are scored using a Likert-scale, with between 5 and 7 response choices per item, and are summed for a total score (range = 3-18). [27] The SBQ-R has good reliability ($\alpha = .81$) in college student samples [28] and internal consistency in the present study was good ($\alpha = .88$).

The *Self-Compassion Scale – Short Form* (SCS-SF) is a 12-item scale that assesses the three main components of self-compassion (i.e., self-kindness, common humanity, and mindfulness) and their negative counterparts (i.e., self-judgment, isolation, and over-identification). [29] Sample items include "I try to be understanding and patient towards the aspects of my personality I don't like" and "I try to see my failings as part of the human condition." Items are scored on a 5-point Likert-scale from 1 ("almost never") to 5 ("almost always") and, after reverse-scoring negative items, are summed; higher scores indicate greater self-compassion. The SCS-SF has good to excellent reliability in college student samples ($\alpha = .80$ to $.92$), [29] and was good in our sample ($\alpha = .87$).

The *Wellness Behaviors Inventory* [22] is a 10-item measure that assesses how often common health-promoting behaviors are performed, over the past three months. Examples of items include "I eat breakfast," "I exercise for 20 continuous minutes or more, to the point of perspiration," and "I take time to relax." Items are scored using a Likert-scale, with responses ranging from 1 ("less than once a week or never") to 5 ("every day of the week"). An overall wellness behavior score is calculated by reverse scoring two items and then summing and computing an item mean score. The WBI has internal reliability ranging from .64 to .75 among

community and college student samples. [11] In the current study, internal consistency was adequate ($\alpha = .73$).

The *Center for Epidemiologic Studies Depression Scale – Revised - 10* [30] is a 10-item measure designed to assess depressive symptoms in the general population, over a two-week period. Sample items include "I felt depressed," "I felt that everything I did was an effort," and "I felt lonely." This scale uses a 4 point Likert-scale to measure depressive symptoms, with scores ranging from 0-30 and higher scores indicating more depressive symptoms. [30] The CESD-10 has excellent sensitivity and specificity in older adults [30] and internal consistency in our current study was excellent ($\alpha = .90$).

Statistical Analyses

Bivariate analyses. Pearson's product-moment correlations were used to examine the independence of, and zero-order relations between, self-compassion, wellness behaviors, depressive symptoms, and suicidal behavior; no associations exceeded the recommended cut off for multicollinearity. [31]

Serial Multivariate Mediation Analyses. To test for mediation, in two separate models, Hayes (2013) [32] PROCESS Model 6 was used to examine the association between self-compassion and suicidal behavior, and the potential serial mediating effects of depressive symptoms (1st order) and wellness behaviors (2nd order) in the first model, and wellness behaviors (1st order) and depressive symptoms (2nd order) in the second model (Fig. 1 & Fig. 2). Preacher and Hayes' (2008) [33] technique tests for indirect effects, using bootstrapping resampling (10,000 resamples), without making the assumption of normally distributed data or requiring significant direct effects.

Results

The sample was primarily female (*n* = 242; 68.0%); 31.5% identified as male (*n* = 112) and 0.6% as transgender (*n* = 2), with a mean age of 21.44 years (*SD* = 5.16). Most participants self-identified as White (*n* = 295; 83.1%), 8.5% identified as Black/African American (*n* = 30), 0.6% identified as Hispanic (*n* = 2), 4.2% identified as Asian (*n* = 15), 0.3% identified as Native American (*n* = 1), 1.1% identified as multiracial (*n* = 4), 2.0% identified as other (*n* = 7) and 0.3% declined to answer (*n* = 1).

All study variables were significantly associated in the predicted directions, supporting bivariate hypotheses (see Table 1). Depressive symptoms were positively related to suicidal behavior, and self-compassion and wellness behaviors were negatively related to suicidal behavior. Self-compassion and wellness behaviors were negatively associated with depressive symptoms, and self-compassion and wellness behaviors were positively related to one another.

In the first serial mediation analyses (Model 1; Figure 1), there was a significant total effect when depressive symptoms and wellness behaviors were included in the model (*c* = -1.77, *95% CI* = -2.72 to -.82). The direct effect of self-compassion on suicidal behavior was not significant when depression and wellness behaviors were added to the model (*c'* = -.81, *95% CI* = -1.85 to .23), indicating mediation. The total indirect effect of self-compassion on suicidal behavior was also significant (*ab* = -.96, *95% CI* = -1.80 to -.37). A significant specific indirect effect was found for self-compassion through depressive symptoms (a_1b_1 = -.73, *95% CI* = -1.58 to -.17), where greater levels of self-compassion were associated with lower levels of depressive symptoms and, in turn, less suicidal behavior. A significant specific indirect effect was also found for self-compassion via depressive symptoms and wellness behaviors ($a_1a_3b_2$ = -.11, *95% CI* = -.41 to -.005). Greater levels of self-compassion were associated with lower levels of depressive symptoms and, in turn, to greater engagement in wellness behaviors and to less

consequent suicidal behavior. The proposed pathway via wellness behaviors was not significant (a_2b_2 = -.11, *95% CI* = -.62 to .04).

In our second serial mediation model (Model 2; Figure 2), there was a significant total effect when wellness behaviors and depressive symptoms were included in the model (c = -1.77, *95% CI* = -2.72 to -.82). The direct effect of self-compassion on suicidal behavior was not significant when wellness behaviors and depressive symptoms were included in the model (c' = -.81, *95% CI* = -1.85 to .23), indicating mediation. The total indirect effect of self-compassion on suicidal behavior was significant (ab = -.96, *95% CI* = -1.79 to -.37). Significant specific indirect effects were found for all paths of the self-compassion-suicidal behavior relationship. First, there was a significant indirect pathway for self-compassion through wellness behaviors (a_1b_1 = -.23, *95% CI* = -.82 to -.003). Greater levels of self-compassion were associated with more wellness behaviors and, in turn, to reduced engagement in suicidal behavior. Second, there was a significant indirect pathway for self-compassion through wellness behaviors and depressive symptoms ($a_1a_3b_2$ = -.08, *95% CI* = -.28 to -.01); self-compassion was serially associated with greater engagement in wellness behaviors and decreased levels of depressive symptoms and, in turn, decreased suicidal behavior. Finally, there was a significant indirect pathway for self-compassion through depressive symptoms (a_2b_2 = -.66, *95% CI* = -1.46 to -.15). Greater levels of self-compassion were associated with less depressive symptoms and, in turn, to reduced engagement in suicidal behavior.

Comment

In our collegiate sample, in support of our hypotheses, self-compassion was associated with lower suicidal behavior through the following mechanisms: (i) indirectly via lower levels of depressive symptoms in both models; (ii) indirectly via lower levels of depressive symptoms

and, sequentially, greater levels of engagement in wellness behaviors; (iii) indirectly via wellness behaviors (Model 2); and (iv) indirectly via higher engagement in wellness behaviors and, sequentially, lower levels of depressive symptoms. Our results indicate that self-compassion is directly and inversely related to suicidal behavior, and also indirectly related via depression and via wellness behaviors. Further, self-compassion was serially related to less depressive symptoms and, in turn, to greater engagement in wellness behaviors and consequent lessened suicidal behavior, as well as serially to greater engagement in wellness behaviors and less depressive symptoms and, in turn, to less suicidal behavior.

Previous literature has indicated independent relations between self-compassion, wellness behaviors, depression and suicidal behavior, and although depression has been well-established as a risk factor for suicidal behavior, [16] the protective nature of self-compassion and wellness behaviors for suicidal behavior are less known. [4, 12-13] Our novel findings expand on previous work by adding to the scarce literature on the relations between self-compassion and suicidal behavior, and between wellness behaviors and suicidal behavior. As well, we highlight potential mechanisms of action underlying the relation between self-compassion and suicidal behavior, specifically the effect of self-compassion on mood and engagement in proactive, adaptive wellness behaviors.

As mentioned, self-compassion is beneficially related to physical and mental health outcomes [11, 21, 34] and, as expected, was significantly related to greater engagement in health behaviors and fewer depressive symptoms in our collegiate sample. The self-compassion-suicide association is consistent with previous literature indicating that self-compassion is associated with reduced risk of suicide in veterans, youth, and victims of intimate partner abuse. [12-14] Research indicates that self-compassion may protect against suicidality through lessening

trauma-related symptoms (e.g., panic, posttraumatic stress) [14] or by lowering negative internal experiences, such as self-blame and shame; [13] however, the present study suggests two additional factors (i.e., fewer depressive symptoms, greater wellness behaviors) through which self-compassion operates to lessen suicidal behavior.

Self-compassion may protect against depressive symptoms by promoting more adaptive coping skills to better handle stressful situations. [35] For example, persons with less self-compassionate tend to function in an avoidant manner, making them more vulnerable to experiencing depressive symptoms. [21] Additionally, low self-compassion is associated with brooding rumination (i.e., self-critical pondering), which exacerbates and heightens depressive symptoms. [36] In contrast, high levels of self-compassion are associated with better reactivity to emotional events, the ability to keep negative situations in perspective, and more resilience in the face of a stressor, possibly protecting against the experience of depressive symptoms. [37]

Similarly, self-compassion may promote engagement in wellness behaviors through self-regulation strategies [34] or by promoting positive emotions [11] which, in turn, may contribute to better health functioning. Individuals who are self-compassionate may be more likely to monitor their health goals with less defensiveness, have more self-control over their health-related behaviors, disengage from goals that are not beneficial to them, seek assistance when needed, and adhere to treatment recommendations. [34] Moreover, self-compassion may enable engagement in wellness behaviors by alleviating negative responses to setbacks or failures (e.g. responding with self-kindness rather than criticism) during the behavior change process and by promoting positive affect while working toward health-related goals. [11]

Due to research suggesting bi-directionality between depressive symptoms and engagement in wellness behaviors, we conducted two mediation analyses. Both models were

significant, suggesting that self-compassion is related to suicidal behavior via depressive symptoms and, sequentially, wellness behaviors (Model 1), but also via wellness behaviors and sequentially lower levels of depression (Model 2). One weakness of using PROCESS is that there are no model fit statistics, making it difficult to statistically compare the two models. Further, the completely standardized indirect effect in both models was the same, preventing the comparison of explained variance; therefore, the two models are compared descriptively.

The specific indirect effect of self-compassion on suicidal behavior via wellness behaviors was not significant in Model 1; however, all specific indirect effects were significant in Model 2, suggesting Model 2 may have better predictive validity. The lack of a specific indirect effect for wellness behaviors (Model 1) suggests that, in the context of depression, where depression is considered to precede, and perhaps supersede, ability to engage in wellness behaviors, perhaps the linkage between self-compassion and wellness behaviors is insufficient to reduce suicide risk; that is, depression may need to be addressed first, or primarily.

Our more-complete model, Model 2, suggests, on the other hand, that when health behaviors are assumed to precede depressive symptoms, self-compassion is indirectly related to less engagement in suicidal behavior, via this pathway. Our results support past research indicating a link between maladaptive health behaviors and depression, and seem particularly pertinent for students on college campuses, who are at risk for adoption of unhealthy habits (e.g., poor diet, lack of sleep, substance misuse) and who have higher rates of sub-threshold depressive symptoms than the general population, both of which increase suicide risk. [16] Importantly, in our sample, self-compassion appears to be a potentially preventive catalyst that might help students to initiate and maintain engagement in adaptive health behaviors and, in turn, reduce depressive symptoms and suicide risk. Previous research suggests that engaging in wellness behaviors

promotes self-esteem [15] and self-efficacy [38] characteristics that may buffer against risk for depression and suicide. [15]

Of note, in our models, depressive symptoms were related to suicidal behavior, both directly and indirectly via wellness behaviors. This indirect pathway is a critical linkage, as health is often poor in persons with depression, and may occur as a result of maladaptive cognitive-emotional functioning. [25] For example, depressed individuals that are hopeless about the future may see no reason to reduce substance misuse, pursue physical activities, or eat healthily, or may be unable to do so due to lethargy and lack of volition. [26] Thus, reduction of depression as a suicide prevention strategy remains an important goal for campus and population-level public health campaigns.

Limitations

Our findings should be viewed in the context of limitations. First, the cross-sectional design precludes exploration of causal relationships, and bi-directionality is a possibility. It is possible that engagement in wellness behaviors promotes self-compassion or that depressive symptoms reduce self-compassion; however, self-compassion is believed to be a stable trait [8] and the notion that self-compassion facilitates wellness behaviors [11, 34] and buffers against depression [19, 21] is consistent with previous literature. Yet, although prospective, longitudinal research is needed to determine causal relations and the true ordering of these risk and protective factors, our findings provide preliminary evidence to guide future research.

Our analytic strategy did not allow us to statistically compare our two mediation models, as there are no available model fit statistics. Additionally, since the variables included in each model were the same, effect sizes across models were the same, resulting in an inability to differentiate variance, and, due to our use of covariates, the variance change indicators are not

valid. Future studies, utilizing more-sophisticated modeling techniques, could yield enhanced understanding of the relations between correlates of self-compassion.

Finally, our predominantly White, female, college student sample may limit generalizability of results, although it is representative of the larger US collegiate population. Despite this, college students are at heightened risk for many of our investigated variables – poor health behaviors, depression and suicidal behavior – as compared to the general population; [2] thus, our findings are applicable to a large, and at-risk, population of interest.

Implications

Our findings have implications for both physical and mental health promotion efforts, including suicide prevention. Although most research has focused on self-compassion as a stable trait, interventions, such as Compassion-Focused Therapy, are effective in bolstering state-level self-compassion, including in a course-based format for college students [39-40] and, more stringently, in a randomized control trial of Mindful Self-Compassion (MSC), where participants in the intervention group reported significant increases in self-compassion and wellbeing compared to wait-list controls. [40] For college administrators and student-focused healthcare practitioners translational ability is critical; for instance, can self-compassion be inculcated briefly, perhaps in curricular format? As but one example, in a randomized control study, a 3-week brief self-compassion intervention for college students resulted in significant increases in self-compassion, mindfulness, optimism, and self-efficacy, and significant decreases in rumination, compared to time-management controls. [41] Further, self compassion interventions may be delivered in-person or online, can be self-initiated, and are not dependent on advanced training, making them an ideal vehicle of change that can be utilized by healthcare providers, administrators and faculty alike, to support both employee and student well-being.

Indeed, self-compassion can be used as a tool to explore and soothe painful emotions and experiences, and to cope with current stressors, and may be most relevant and beneficial during times of distress. Of note, in a recent study with veterans, we found an interaction between self-compassion and interpersonal and external stressors, such that self-compassion was "activated" in times of distress, suggesting it is a dynamic rather than static factor in well-being.[42] Thus, at the individual level, positive psychological interventions which aim to increase self-compassion may, ultimately, reduce depressive symptoms, increase proactive health behaviors, and lessen suicidal behavior in college students. As well, interventions such as Acceptance and Commitment Therapy (ACT) and Dialectical Behavior Therapy (DBT) can be implemented to target depressive symptoms. [43-44] ACT and DBT may be particularly appropriate in the context of our overall model, as both incorporate mindfulness strategies and acceptance of the self, which are components of self-compassion, and DBT is strongly supported in the reduction of suicidal behavior. [43-44] Psychoeducation, motivational interviewing, and behavioral activation strategies can also be utilized to promote individual-level engagement in wellness behaviors. [38] At a public health level, campus-wide efforts to promote health behaviors, such as offering behavioral activation opportunities and wellness behavior courses, which are effective in changing health behaviors in college students, [38] and use of health-messaging strategies to increase self-compassion, may reduce suicide risk in college students.

Conclusions

In our collegiate sample, self-compassion was related to suicidal behavior, in part, due to the sequential associations between depression and wellness behaviors. Higher levels of self-compassion may promote adaptive strategies to regulate mood (e.g., depression) or prompt engagement in health-promoting behaviors, thereby reducing engagement in suicidal behavior.

As well, multiple pathways exist, suggesting that intervention efforts should utilize multi-faceted approaches to suicide prevention, addressing both mental and physical health equally and simultaneously. Although future research is needed, our findings suggest that self-compassion may have numerous benefits for college students, including positive associations with mental and physical health and the reduction of risk for suicide.

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Table 1

Means, standard deviations, and correlations among variables of interest (*N* = 365)

Variable	*M*	SD	1	2	3
1. Self-Compassion	2.96	0.72	-	-	-
2. Depressive Symptoms	9.80	6.74	-.52**	-	-
3. Wellness Behaviors	3.09	0.65	.22**	-.28**	-
4. Suicidal Behavior	6.02	3.09	-.31**	.43**	-.31**

Note. Self-compassion = Self-Compassion Scale – Short Form (SCS-SF); depressive symptoms = Center for Epidemiologic Studies Short Depression Scale (CESD-10); wellness behaviors = Wellness Behavior Inventory (WBI); and suicidal behavior = Suicidal Behavior Questionnaire-Revised (SBQ-R).
*Note:*** $p \leq .01$

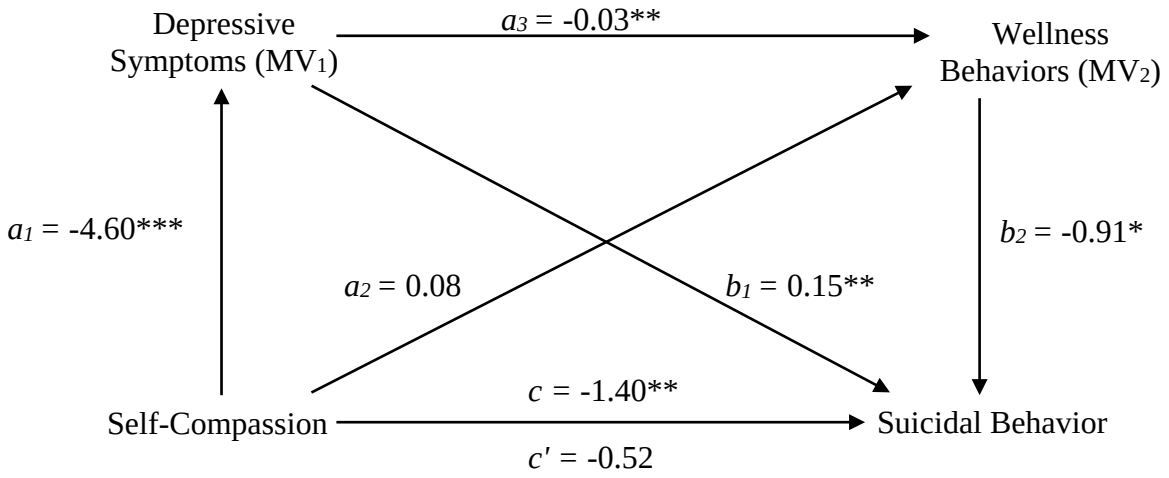

Figure 1. Illustration of an indirect effects model for serial mediation (Model 1).
Note. MV = mediator variable. a_1 = direct effect of self-compassion on depressive symptoms; a_2 = direct effect of self-compassion on wellness behaviors; a_3 = direct effect of depressive symptoms on wellness behaviors; b_1 = direct effect of depressive symptoms on suicidal behavior; b_2 = direct effect of wellness behaviors on suicidal behavior; c = total effect of self-compassion on suicidal behavior, without accounting for depressive symptoms and wellness behaviors; c' = direct effect of self-compassion on suicidal behavior when accounting for depressive symptoms and wellness behaviors; Total Indirect Effect $(ab) = a_1b_1 + a_1a_3b_1 + a_2b_2$ (self-compassion affects suicidal behavior through various specific effects); a_1b_1 = specific indirect effect through depressive symptoms; $a_1a_3b_1$ = specific indirect effect through depressive symptoms and wellness behaviors, in serial; a_2b_2 = specific indirect effect through wellness behaviors. Adapted from Preacher and Hayes (2012). *$p \leq .05$, **$p \leq .01$, ***$p \leq .001$

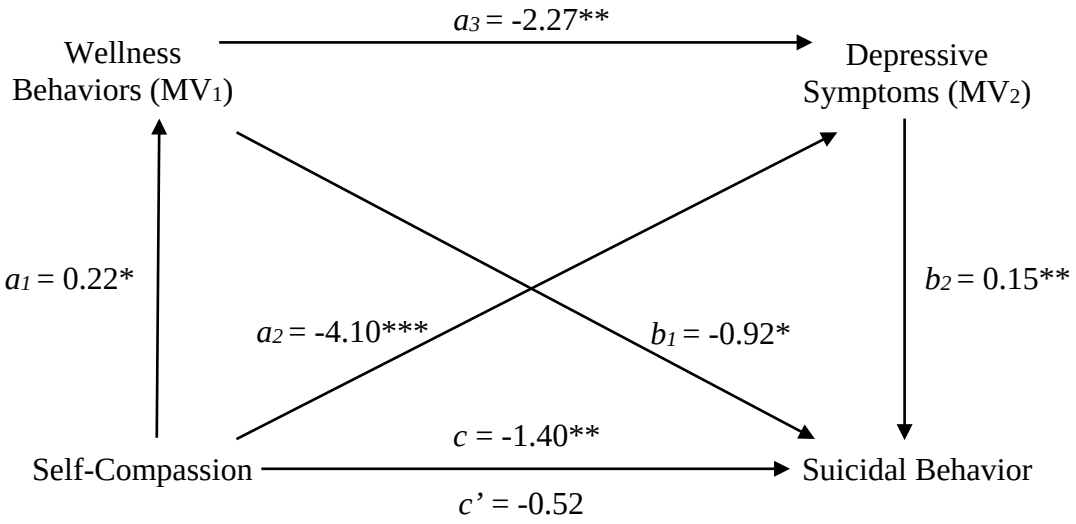

Figure 2. Illustration of an indirect effects model for serial mediation (Model 2).
Note. MV = mediator variable. a_1 = direct effect of self-compassion on wellness behaviors; a_2 = direct effect of self-compassion on depressive symptoms; a_3 = direct effect of wellness behaviors on depressive symptoms; b_1 = direct effect of wellness behaviors on suicidal behavior; b_2 = direct effect of depressive symptoms on suicidal behavior; c = total effect of self-compassion on suicidal behavior, without accounting for wellness behaviors and depressive symptoms; c' = direct effect of self-compassion on suicidal behavior when accounting for wellness behaviors and depressive symptoms; Total Indirect Effect $(ab) = a_1b_1 + a_1a_3b_1 + a_2b_2$ (self-compassion affects suicidal behavior through various specific effects); a_1b_1 = specific indirect effect through wellness behaviors; $a_1a_3b_1$ = specific indirect effect through wellness behaviors and depressive symptoms, in serial; a_2b_2 = specific indirect effect through depressive symptoms. Adapted from Preacher and Hayes (2012). *$p \leq .05$, **$p \leq .01$, ***$p \leq .001$